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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,753	03/25/2004	Yiou-Wen Cheng	250320-1070	7334

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EXAMINER	
PAUL, DISLER	

ART UNIT	PAPER NUMBER
2615	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/809,753	CHENG, YIOU-WEN	
	Examiner	Art Unit	
	Disler Paul	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-14 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1- 6, 8,10-11,13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung (US 6,504,933 B1) and Suzuki (5,578,781).

Re claim 1, the method for reverberation processing (col.1 line 25-32/3D sound effect), comprising: providing a high quality filter module and a low quality filter module; inputting an audio signal into the high quality filter module for generating a high quality reverberation in a limited period (fig.4-5 wt (130,140)/respond to finite/limited impulse response); col.4 line 57); inputting the audio signal to the low quality filter module for generating a low quality reverberation (fig.4-5 wt (170,180.210); col.4 line 59-60); and combining the high and low quality reverberations generated by the high quality filter module and the low quality filter module (fig.4-5 wt (190,200); col.5 line 43-52).

But, Chung failed to disclose of the having a low pass filter with unlimited length and delaying the reverberation generated by the low quality filter module. However, Suzuki disclose of a sound effect wherein the user have the options of having a low pass filter with unlimited length and delaying the reverberation generated by the low quality filter module (fig.10,1 /5-6 wt(FS,DS;Fa,Da); col.17 line 8-13/IIR filter with delay before mixing) for the purpose of producing a tone having a tone color somewhat being different from the source sound so to achieve a duet effect. Thus, taking the combined teaching of Chung and Suzuki as a whole, it would have been obvious for one of the ordinary skill in the art at the time of the invention to have incorporated the low pass filter with unlimited length and delaying the reverberation generated by the low quality filter module for the purpose of producing a tone having a tone color somewhat being different from the source sound so to achieve a duet effect.

Re claim 2, the method of claim 1, wherein the step of providing the high quality filter module is providing a finite impulse response filter (FIR filter) (fig.4 wt (130,140)).

RE claim 3, the method as claimed in claim 1, wherein the step of providing the low quality filter module is providing an infinite impulse response filter (IIR filter)(Suzuki, fig.1 /6 wt(FS,DS); col.17 line 19-13/IIR).

Re claim 4, the method as claimed in claim 1, wherein the step of delaying the reverberation generated by the low quality filter module is achieved by using a delay unit fig.1 /6 wt(DS); col. 6 line 48-52).

Re claim 5, the combined teaching of Chung and Suzuki as a whole, teach of the method as claimed in claim 1, However, while the combined teaching of Chung and Suzuki as a whole, is silent in regard to the specific wherein in the step of combining the high and low quality reverberations generated by the high quality filter module and the low quality filter module, the high and low quality reverberations can be generated in an overlapped way. Chung did disclose of having both of a high and low quality filter modules being added ((fig.4-5 wt (190,200)), thus with the above disclosure it is inherent of the existence of the limitation wherein the high and low quality reverberations can be generated in an overlapped way.

Re claim 6, the method as claimed in claim 1, wherein the step of combining the high and low quality reverberations generated by the high quality filter module and the low quality filter module is achieved by using an adder (fig.4-5 wt (190,200); col.5 line 43-53).

Similarly, Re claims 8,10-11,14 have been analyzed and rejected with respect to claims 1,2-3,6 respectively.

Re claim 13, the reverberation processing apparatus as claimed in claim 8, wherein the combined teaching of Chung and Suzuki as a whole, would have incorporate the audio signals with low quality reverberation effects and high quality reverberation effects overlap after the delay time (see claim 5 rejection).

3. Claims 7,9,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung (US 6,504,933 B1) and Suzuki (5,578,781) and further in view of Obviousness.

Re claim 7, the method as claimed in claim 1, wherein in the step of inputting an audio signal to the high quality filter module for a finite period of time ((fig.1 (130)), However, the combined teaching of Chung and Suzuki as a whole, fail to disclose of the limitation wherein the period is the beginning 50 ms. However, official notice is taken the concept of adjusting the high filter so that the inputting signals is limited within a certain period of time is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to have incorporate the adjusting the high filter so that the inputting signals is limited within a certain period of time for creating sound effect as perceived by the user.

Re claim 9, the reverberation processing apparatus as claimed in claim 8, wherein the finite period of time is about 50 ms (see claim 7 rejection).

Re claim 12, the reverberation processing apparatus as claimed in claim 8 with the delay (Suzuki,fig.1,10 (DS,DA)), However, the combined teaching of Chung and Suzuki as a whole, fail to disclose of the specific wherein the delay time lasts for about 25 ms to 45 ms. However, official notice is taken the concept of creating a sound effect with a delay within a specific range of time is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art at the time of the invention to have incorporate the creating a sound effect with a delay within a specific range of time for creating the tone sound effect as perceived.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art disclose of the mixing the output of both the high and low frequency filter modules and with delaying in producing sound effects: Fujita et al. (US 2003/0169887 A1) and Takamiya et al. (5,818,944) and Yamada et al. (5,757,931) and Toyama (5,444,784) and Kunugi (4,980,914).

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP

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